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"The Foolmaster Who Fooled Them"

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Throughout the nineteenth century, physicians assumed the major task of analyzing and warning against quackery and unorthodoxy. The nature of this criticism is described, with key reliance on Worthington Hooker's *Lessons from the History of Medical Delusions* (1850). Most physicians viewed prospects for suppressing quackery more hopefully than Hooker did. Even he, however, would be shocked that delusion could persist so stubbornly despite advancing medical science, expanding education, and increasing regulation. Many factors help explain today's continuing—even burgeoning—quackery. These include a less cheerful view of both human nature and of the future, widespread skepticism about the fruits of science, impatience with governmental regulation, the vogue for self-help in health, increasing promotional sophistication on the part of unorthodox health vendors, and cooperation among various wings of unorthodoxy to maximize political pressure. Examples are given. Champions of alternative therapies predict their triumph over orthodox medical science in the contest being waged for the allegiance of the public.

One evening at Mory's, Dink Stover sits listening to Ricky Rickets discourse on how he plans to become "a millionaire in ten years" [1]. That certain route to wealth lies in "making an exact science" of beguiling the foolish. "What's the principle of a patent medicine?" Ricky asks rhetorically, and then answers himself: "[A]dvertise first, then concoct your medicine." "All the science of Foolology," he elaborates, "is: first, find something all the fools love and enjoy, tell them it's wrong, hammer it into them, give them a substitute and sit back, chuckle, and shovel away the ducats. Why, Dink, in the next twenty years all the fools will be feeding on substitutes for everything they want; no salt—denatured sugar—anti-tea—oiloline—peanut butter—whale's milk—et cetera, et ceteray, and blessing the name of the foolmaster who fooled them."

Ricky's prediction contained much truth. Many blessings, and ducats too, have enriched critics of the regular diet who have provided some substitute promoted to preserve and restore health. Not one forthright non-fictional foolmaster, however, so far as I know, has enriched the record, as Ricky did, with a frank espousal of "the science of Foolology." For criticism of health quackery we have had to turn elsewhere.

Throughout the nineteenth century, physicians, naturally enough, assumed the major burden of analyzing and rebuking unorthodoxy and of warning the public against its dangers. The theme served as sole subject for many papers and lectures and as source for major sections in essays assaying the state of the profession. Let me sketch the pattern of this critique paying particular attention to a prize essay written

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by a graduate of Yale who had attended the college nearly a century before the matriculation of Ricky Rickets and Dink Stover.

Worthington Hooker, a descendant of Thomas Hooker, received his degree with high honor in 1825 [2,3,4]. He then turned to the study of medicine, first in Philadelphia, then in Boston, being awarded his M.D. degree by Harvard. Dr. Hooker established a practice in Norwich which he maintained for almost a quarter century before being invited back to Yale to occupy the chair of the theory and practice of medicine. A colleague described Hooker as a man "of medium stature, well rounded and portly in form, with an open, cheerful countenance, a gracefully turned and well developed head, thin gray locks, and fine 'presence'" [4]. Besides teaching, Hooker practiced medicine, served on committees of the American Medical Association, wrote popular books about science for children, and penned reflective essays on the state of medicine in American society. "His thoughts flowed from his pen," a memorialist said, "almost without an effort—so quietly, and with so little exertion and excitement, that he could write far into the night and sleep soundly afterward" [2]. In 1850, two years before leaving Norwich for New Haven, Hooker submitted an essay in competition for the Prize Fund Dissertation of Rhode Island, and he won. The essay sought to draw "Lessons from the History of Medical Delusions." As did many similar essayists through the heart of the nineteenth century, Dr. Hooker sought to expose the methods of foolology, explain why it flourished, condemn its results, and anticipate its future.

"This is an age of *nostrums*," Hooker declared; ". . . they are as abundant and clamorous as were the frogs in one of the plagues of Egypt, when they came croaking into the houses and even the bedchambers" [5]. The croaking of the nostrum-maker covered a gamut of dubious claims. He had "the disposition," said Hooker, "to adopt exclusive views and notions." His product was the one sure and certain cure for all ailments, or at least for this or that dread disease baffling the skill of other purported healers. Such assertions of therapeutic monopoly were bolstered in a host of specious ways. The proprietor often pretended he had scientific credentials which, in fact, he did not possess. Sometimes he sought to steal the identity of famous physicians. In later years Robert Koch and Paul Ehrlich were to suffer such an indignity [6]. More often the foolmaster gave his nostrum a "high-sounding name" or slogan to enhance its stature, like Dr. Sweet's Infallible Liniment or Goelicke's Matchless Sanative, the very "Conqueror of Physicians." Sometimes proprietors resorted to "loose analogies" to persuade readers of their advertising how the nostrums worked [5]. Dr. Hooker turned to folk medicine to explain this mechanism: "The idea that rubbing down will carry off disease while rubbing up will not, the idea that codfish water will strengthen a weak back only when it is made from a strip of the skin taken from the whole length of the fish, the idea that the powder of the jaw bone of a dog is an essential ingredient of a preventive of Hydrophobia. . . ." But many nostrum-makers used the same approach. Benjamin Brandreth made a fortune from cathartic pills, arguing that they cleansed the blood, which, contaminated by bad food, impure water, grief, overwork, contagion, lay at the root of all disease [6]. The seining of polluting solids from the flowing stream was an easy metaphor to visualize.

Newness and secrecy, when attributed to nostrums, lent tham allure. Many of Hooker's fellow-critics debunked the alleged marvelous new remedies by unveiling their secrecy, revealing them to be inert substances, or standard remedies, or dangerous drugs in large amounts, sometimes drugs like mercury and morphine the presence of which the labels specifically denied [6]. Secrecy, physicians insisted, had no legitimate place in popular packaged therapy.

Critics of nostrums elucidated the testimonial racket. The "enormous machinery of certificates and advertisements," Hooker charged, underlay what had "become a monstrous business interest" [5]. Some testimonials were fabricated, others honestly volunteered by patients during the tonic wave of confidence induced by beginning to take a nostrum, others purchased for a pittance [6]. Later on, agents of Duffy's Pure Malt Whiskey were to tour the nation's old folks homes, photographing centenarians and for a few dollars getting them to sign a statement attributing to Duffy's their remarkable longevity [7]. In exposing such shenanigans, critics sometimes pointed to newspaper issues containing, in nearby pages, both testimonials and the obituaries of the testators [8].

Critics also explained the alleged successes that created confidence among customers and kept the nostrum market booming. Hooker placed these phenomena first among the "principal elements or causes of medical delusions" [5]. One key element was the ancient *post hoc ergo propter hoc* fallacy—as Hooker phrased it "the too ready disposition to consider whatever follows a cause as being the result of that cause." The simple acts of daily life conditioned people to a cause-effect sequence which did not work in the more complex realm of sickness and therapy. "When a remedy is given," Hooker noted, "its effects are so mingled with the effects of other agencies, that there is a great liability to confound them together." The chief of those agencies confusing the therapeutic picture was nature, the tendency of the system to cure itself. An awareness of this circumstance, Hooker noted, dated back to Hippocrates, although it was frequently forgotten. Sometimes nature alone produced the cure, "in spite of the mistaken and officious interference of art." Another commentator made the same point by noting, "Nature can not build a railway, but she can very often cure a disease." Nature proved to be the patent medicine proprietor's continuing ally [9].

Critics rebuked the nostrum-maker's Galileo ploy which he often resorted to when challenged [6]. The quack, lashing back at his physician tormentors, cried "Persecution!" and insisted his discovery ranked with the marvels of the ages, like those made by Galileo and other geniuses, scientific breakthroughs which the orthodox had belittled at the time but which the future vindicated. Physicians pooh-poohed such pretensions, especially on the part of marketers who lacked even a scintilla of scientific stature. Repeatedly doctors posed some variant of this question: "Who would employ a blacksmith to repair a watch, a barber to shoe a horse, a ship-carpenter to make bonnets, or a milliner to build a church? Or who would send a son to a dumb man to learn elocution, or to one born deaf to be taught music? And yet it is quite as reasonable and philosophical to do one of these things, as to expect that the human system should be repaired by one who knows nothing of it" [10].

The results of foolology could lead to disaster. Frightened into the medicine habit by the subtle advertising of the medically unskilled, the public found their digestions ruined by harsh laxatives, their very lives wrecked by unlabeled alcohol and opium or by delay in seeking proper treatment while dallying with nostrums utterly irrelevant to their disease.

Quackery flourished, critics like Hooker frequently proclaimed, not only because of the cleverness of charlatans and the gullibility of the masses. Other groups shared in the guilt. These included the "old aunt Betsies" of the community gossiping the neighbors into trying nostrum brands; the lords of the press who accepted the nostrum-makers' fees despite the social dangers in their medical messages; the clergy, who often blundered into praising nostrums, thus imbuing them with a dimension of faith healing. And receiving especially severe rebuke from physician critics were their

own erring brethren who in various ways, witting and unwitting, encouraged unorthodoxy [6].

In Worthington Hooker's day, orthodox physicians felt badly besieged by the growing nostrum business, the burgeoning of competing systems, and declining public confidence. The widespread scorn of regular medicine was caught up in one popular saying, that physicians were the nutcrackers which angels employed to get souls out of the shells surrounding them [11]. All the learned professions fell into disrepute in an era boasting of the prowess of the common man, and licensing laws were swept from statute books. "We go in for the 'largest liberty,'" a Cincinnati journalist wrote, "without pretending to decide which system is best. . . . [M]edicine, like theology, should be divorced from [the] State. . . . We go for free trade in doctoring." For the orthodox physician, as Charles Rosenberg has written, his had become "a hostile world, a world turned upside down, in which democracy and morality, reason and progress, the very ideals he lived by, had become the allies of quackery and humbug."

Hooker, while believing the public's low rating of physicians unwarranted, held that the plight of the profession was, to some extent, its own fault [5]. Indeed, Hooker makes the fundamental aim of his prize essay the argument that popular mind and professional mind have harbored the same delusions. "It is folly for the physician to boast," Hooker asserts, "that he worships in a temple, upon whose altars no strange fires ever burn, while he looks out with contempt upon what he regards as the almost heathenish observances and worship of the unscientific and unlearned people." His error may be wrapped in "the pomp and circumstance of erudition," in contrast with that of "coarser and uninformed minds" in which error is "homely in its guise." Nonetheless, of Hooker's seven-point list of the key elements involved in medical delusion, physician as well as untutored citizen may share them all. Doctors too, for example, may give their prescriptions too much, and nature too little, credit when patients recover. Physicians as well as quacks may adopt rigidly exclusive notions, may "run to extremes," may over-theorize and under-observe, may rely on loose analogies. Other medical critics rebuked fellow-physicians for vending their own secret nostrums and giving testimonials in support of widely marketed patent medicines.

From the advantage of our perspective, and measuring by the yardstick of efficacy, the judgment of therapy as practiced by Dr. Hooker's contemporaries must sadly be even more severe than that he himself rendered. Yet the good intentions of most regular practitioners, and the therapeutic power of the ritual of their practice, if not of their drugs and lancet, may let us regard them retrospectively with greater understanding and sympathy than we can muster for quacks who pushed their potions during the same years. To recapture the rationale behind the regular doctor's ritual, I recommend to you Charles Rosenberg's essay, "The Therapeutic Revolution," in a recent book of historical essays bearing the same name [12].

While criticizing his brethren, Hooker viewed the profession's future hopefully [5]. In two areas especially he detected notable advance, "the relinquishment of a profuse and undiscriminate medication," and "the triumph of observation over theory." While holding that Pierre Louis and other members of the "numerical school" had become too "wedded to [this] one particular mode of observation," to the neglect of "those qualities of which cannot be expressed by numerals," Hooker praised the role of statistics legitimately applied.

With respect to the chances for quenching quackery, Hooker's view of the future is less sanguine, but not utterly glum. He admits that he deems a small segment of

society uneducable. But he does not go so far as some medical observers in considering credulity an inborn trait which nothing could change. Quackery, observed one of the discouraged, writing in the same year as Hooker's essay, was "peculiar to no particular age, or country, or state of society." "It has existed from the earliest periods, and will continue to exist as long as human beings are found upon the earth" [13].

Such gloomy physicians thought that efforts to expose quackery would prove futile, indeed, would backfire, providing notoriety instead. Hooker partially agreed, if the attack were aimed at a specific promoter and delivered in such "sharp and ill-natured" tones as to permit the quack to assume the martyr's stance, winning friends by claiming persecution [5]. Delusions are not killed "by violent hands," Hooker held. They die a natural death and are replaced by others "precisely similar" in pattern. "The Sarsaparilla that yesterday cured all manner of disease . . . is good for nothing today, for a *new* preparation is now in the ascendant. Swaim, and Bristol, and Sands, once so potent to cure, are gone; and now old and young Townsend are striving for the mastery, but both must to-morrow yield to new aspirants for fame and money. In this world of change what multitudes of panaceas and systems have gone and are going to the tomb of the Capulets! A very capacious tomb it is; but it could not hold all its tenants, if some were not continually resuscitated to appear again on stage. . . ."

If opposing an attack in excoriating language upon particular nostrum brands, Hooker did not eschew altogether the condemnation of quackery. For, he believed, a majority of quackery's patrons are capable of being saved, "those who are more or less intelligent and rational on most subjects," but badly deluded on the subject of health. For them there is hope. They may learn from a lucid exposure of the common elements of error. To help them, to help physicians help them, to help physicians rid their own minds of error, these were the lessons Hooker sought to teach in considering the history of medical delusions.

The temper of Hooker's views lay at a midway point in the gamut of anticipations about quackery's future, between those seeing no hope for its curtailment and those expecting its imminent demise. Perhaps in New England, where the tradition of original sin was more deeply rooted, predictions tended toward the gloomy side. The more characteristic view of what the future held for quackery cherished a great deal more hope. Based on the Enlightenment belief in the ordinary person's educability, many physicians predicted quackery's eventual elimination. When the populace had received more public schooling, when science had expanded its horizons a little further, then quackery would vanish, consigned to the museum of outmoded delusions. "Quackery . . . is the legitimate offspring of ignorance," asserted an orator at the opening of a new medical school in Tennessee, "and can only be abridged by elevating the standards of medicine, and disseminating a correct public sentiment" [14]. In "an intelligent community," the orator was persuaded, "quackery could not flourish." Another physician vouchsafed a like optimistic view: "Let but the composition of secret remedies be once known in the community, and the death knell of empiricism will have sounded" [15].

From our own vantage point, sad to say, such buoyant expectations sound incredibly naive. Even a less sanguine forecaster like Worthington Hooker, we may imagine, should he somehow achieve reincarnation and, thirteen decades after his original effort, seek to extract anew "Lessons from the History of Medical Delusions," might exhibit evidences of shock and even of despair. How could it happen, he would wonder, that delusion could persist so stubbornly in the face of all the

remarkable accomplishments that had occurred since he taught medicine at Yale? Soon after Hooker had passed from the scene, the germ theory had arrived, heralding the advent of diagnosis, immunization, and eventually therapy scientific in a sense he could not have imagined, aided by sophistications deriving from the "numerical school" he had regarded with some skepticism. Education of the populace had become well-nigh universal, at public expense, up into the college years. Social policy, moreover, had changed, so that combatting quackery had come to be regarded as a legitimate governmental function [6,16]. Not only must the active ingredients of self-dosage remedies appear on the labels. Promoters who misbranded their ingredients or made misleading therapeutic claims might be forced to pay fines or even spend some time in jail. Yet, despite scientific medicine, universal education, and protective law, Hooker redivivus would find health quackery's death knell had not yet been rung. Quite the contrary. The cash register for the sale of unorthodox products and services had never in history rung at such a merry clip.

A puzzled Hooker, seeking to comprehend the paradoxical joint advance of science and of pseudoscience, would discover that the twentieth century had come to regard human motivation in a more complex way than had the optimists of his own century. Error was considered more firmly rooted than it once had seemed to be, less easily eradicated by that universal solve-all, education. Indeed, both philosophical currents and the impact of events in the twentieth century revealed human nature as harboring the potential for stubborn blindness and for great evil. Progress, which many in the nineteenth century came to deem inevitable, had slowed, if not reversed itself. Lookers toward the future "shifted their gaze from utopias to dystopias" [17]. Confusion reigned in "an age that seemed to have no grand ordering myth" [18]. Not long ago I heard a speech by the historian Christopher Lasch in which he quoted a novelist as saying, "We are all aboard the Titanic. . . ."

Besides the long-range currents, more recent events have brought trauma and confusion. Vietnam and Watergate left a legacy of disillusionment with big government, including its regulatory role. Environmental alarms, especially with respect to nuclear energy, have increased skepticism of big science, as well as of the government's scientific role [19]. An ironic expression of this point of view came in a commencement address by another novelist. "[W]e would be a lot safer," Kurt Vonnegut said, "if the Government would take its money out of science and put it into astrology and reading palms" [20]. Inflation worries and foreign tensions add to the malaise. "People are so frustrated and so panicked," an administrative spokesman said at the Tokyo summit of national leaders, "that any answer, any tonic, any snake-oil salesman can do a land-office business" [21].

Whatever the figurative truth of this assertion, literally—a returned Worthington Hooker would find—it has been happening. The annual bill for unproven arthritis remedies approximates a half billion dollars [22]. The tab for irregular cancer treatments must exceed that sum, including money spent for Laetrile, the unorthodox brand-name health promotion generating the greatest public furor in our nation's history [23]. The bill for unorthodox nutrition is higher still and soaring [24,25]. Sects like chiropractic and naturopathy, the basic rationales of which scientific medicine has rejected as naive, flourish widely [26]. Homeopathy, which Hooker spent much space in rebuking, although later ushered into scientific rectitude, came to seem so moribund as to have its death predicted, but now is reviving [27]. New sects are springing into life.

Two years ago at a convention in Detroit boosting alternative cancer therapies, among the modalities being boomed were reflexology, iridology, ionization, and

transcutaneous nerve stimulus [28]. Reflexology "reaches the heart of correcting bodily problems through foot manipulations" [29]. "Without naming specific diseases," practitioners of iridology asserted, their technique "can warn of heart, back, lung, or sinus trouble. It indicates if a person is acidic, arthridic, or anemic and can reveal a prolapsed colon, backed-up lymph system, underactive or overactive glands . . . [and] can identify an organ that has degenerated enough to become cancerous. And all these may be seen"—the quotation concludes—"in the irises of the eyes." Let me cite for the contemporary Worthington Hooker's pondering a quotation from a brochure on ionization therapy: "Since automobile interiors have an excess of positive ions, and since traffic accidents increase when hot winds blow, it is probable that vehicle ionizers could make driving a safer activity" [30]. Transcutaneous nerve stimulus (or T.N.S.) employs mild electrical current to keep the body's 535 "travel zones" open so as to allow "an even flow of energy" [29].

What are the key characteristics of today's unorthodoxy, that Worthington Hooker, restored to life by one or another of these wonderful new ologies, might point to? One feature that would no doubt assail him with a sense of *déja vu* might be called "the great turn-around." A massive effort has been made in our day, similar to if more sophisticated than a like campaign in Hooker's time, to make alternative therapies to scientific medicine seem like the legitimate road to health, whereas scientific medicine is decried as wrong and dangerous, its practitioners not only blind but money mad. Legitimate self-criticism from within orthodox medicine's own ranks, such as charges that some physicians improperly prescribe or overprescribe today's powerful medicines, can, of course, be turned to good effect in the propaganda of the unorthodox. So too can regular medicine's condemnation of fraudulent or unproven remedies be counterattacked by such headlines as this recent one from a tabloid bought at the grocery checkout counter: "Greedy Docs 'Halt Cancer Cures'" [31].

Let me here insert a parenthesis. Worthington Hooker, could he again search the medical scene to discover and criticize its delusions, as in his own day he did, would find many skeletons to point to in the closets of regular medicine, skeletons still wrapped in "the pomp and circumstance of erudition." Wielding a more advanced yardstick of science with which to measure, his judgments would certainly be much harsher now, against M.D.s who lend their names and degrees to a host of out-and-out quack enterprises, like phony cancer clinics and reducing salons dispensing rainbow pills. Hooker also would criticize subtler but still irresponsible abuses involving prescription drugs. My focus on this occasion, however, is aimed rather at foolology at or outside the borders of the orthodox profession.

A recent cleverly written example of "the great turn-around" appeared in the pages of *Penthouse* for November 1979 [32]. In a roundup of "Alternative Cancer Therapies," written in what a lay reader might take to be a judicious tone, the author gives the names and addresses of a score of practitioners employing so-called "nontoxic therapy" or a mixture of alternative and conventional approaches. Some clinics are very bad, the author confesses, so patients are advised to do their own research. This caveat might be interpreted as a denial that any promises are being made, although the overall tone of the article is buoyant. Indeed, the author says, orthodoxy is beginning to accept approaches that hitherto it condemned as quackery. And about time too, he adds, for the rising death rate from cancer coincides with the period in which the highest sums have been expended in the war against it, suggesting that "organized cancer research is barking up the wrong scientific tree." The whole thrust of the article is to make the unorthodox tree seem greener. Practitioners of

unconventional methods have not spoken out about their triumphs, the author asserts, because of fear brought on by harassment and repression by orthodoxy's power. The author explains away unorthodoxy's inadequate scientific data as essentially a dispute over definitions. His bottom line impression is that more hope resides in the alternative than in conventional therapies. The evidence does not warrant "throw[ing] out conventional therapy altogether," he states, but the tone of his prose may lead the reader to expect that such a day is not far off. "What if," the author queries, "alternative therapies . . . were to receive patients earlier, when their general health is much stronger?" The casual reader, from context, can only conclude that such a course would benefit the cancer patient.

If Worthington Hooker's shade would recognize the technique employed in "the great turn-around," he would also find familiar a second posture, the exploitation of the zest for self-help in the realm of health. For at the time he had penned his essay on medical delusions, the public's sentiment for taking greater control of their own health had also reached a high peak of fervor, and a horde of unscrupulous promoters was engaged in selling wares to be used in self-treatment. Whatever benefits the current preoccupation with keeping fit may have, the gung-ho psychology also harbors hazards. "Running," Lewis Thomas has written in one of his charming essays, "a good thing for its own sake, has acquired the medicinal value formerly attributed to rare herbs from Indonesia" [33]. But beyond exaggerated expectations lie false advice and fraudulent products. A healthy attitude is twisted into unhealthy buying. Taking charge of one's own health gets distorted into handing that health into the custody of a knave or a fool, and paying for the deception. Promoters of specious or suspicious wares deliberately plug into the self-help psychology. A recent publicity release in behalf of a pangamic acid firm brought to court by the Food and Drug Administration, chose to simplify the confrontation by terming it "Self-help v. 'Doctor knows best,'" thus sneaking a specious "vitamin," opposed by scientific medicine, under a rubric enjoying passionate popularity [34].

In seeking to appropriate self-help, promoters glamorize their appeals by linking them with one of the most venerated words and concepts in the American lexicon, "freedom." This "freedom of choice" gambit Worthington Hooker also would recognize. In his day too sectarians and nostrum vendors had encouraged the public "to buy and swallow such physic as they in their sovereign will and pleasure [should] determine" and to "denounce all restrictions" on unorthodoxy "as wicked monopolies for the benefit of physicians" [6]. During the last quarter of a century, the manipulation of the word "freedom" by promoters of unorthodox health wares has once again mounted to a major symbolic campaign. Opponents of such deceptive products, like food and drug officials, have received excoriating criticism. The FDA, in the words of one organ of unorthodoxy, "is . . . a ruthless enemy, as tiranical [*sic*] in its actions as any Russian bureaucrat" [35]. The cover of this magazine appealed to freedom and sought to ally Washington and Lincoln with its cause, carrying their pictures with the caption, "They Too Fought for Liberty Against Great Odds."

Similar arguments are among the main weapons in the arsenal of the proponents of so-called alternative therapies. The Committee for Freedom of Choice in Cancer Therapy asserts that access of a cancer sufferer to an unproven remedy is a Constitutional right. Often the argument gains subtle persuasiveness, as in the introduction to a film strip boosting Laetrile: "We are not prescribing any course of treatment. We endorse nothing but freedom of choice" [36]. Such a pitch has influenced state legislators, and even some federal judges [23].

Besides evidence of a "great turn-around" and an appeal to the noblest motive,

Worthington Hooker, returned to life, might recognize still another characteristic of current unorthodoxy, its not inconsiderable political prowess. In his own day the irregulars, led by botanical practitioners, launched a vigorous and successful campaign to press state legislatures into repealing licensing laws. A New York state senator caught the fervor of this crusade against regular physicians. "The people of this state," he said, "have been bled long enough in their bodies and their pockets, and it [is] time they should do as the men of the Revolution did: resolve to set down and enjoy the freedom for which they bled" [5]. In our day, also under freedom's banner, irregulars have lobbied in state legislative chambers and in the national Congress as well. For decades chiropractors have sought special state licensing laws setting up boards manned by themselves, until now, I believe, all states possess them. In the early 1970s the United States made chiropractors partially eligible for reimbursement for limited services under Medicare and Medicaid [37]. These developments resulted more from political pressure than from scientific advance. Indeed, a Yale anatomy professor, Edmund S. Crelin, devised an experiment which revealed that basic chiropractic theory was anatomically impossible [38]. Using a drill press and a torque wrench, Crelin applied compressive and twisting pressures to the vertebral columns of six cadavers ranging in age from new-born to seventy-six years, and found the spinal nerves adequately protected until the bone-breaking point was reached. "This . . . study," he wrote in 1973, "demonstrates conclusively that the subluxation [or off-centering] of a vertebra as defined by chiropractic—the exertion of pressure on a spinal nerve which by interfering with the planned expression of Innate Intelligence produces pathology—does not occur."

More publicized lately has been the campaign begun in 1976 to legalize Laetrile in the states [23,39,40]. Led by the Committee for Freedom of Choice in Cancer Therapy, the pro-Laetrile forces have stressed high Constitutional principles and blasted conventional cancer treatments, condemned as hazardously futile "cutting, burning, and poisoning." Lobbyists have been very ingenious at getting their message across. Twenty-three states by now have enacted Laetrile laws. Another organization active in this Laetrile campaign came to its participation flushed with a victory in the United States Congress. An effort by the Food and Drug Administration to bring rationality to the vitamin and food supplement field by updating its regulations, which were some three decades old, provoked a massive counter-charge led by the National Health Federation [41]. Founded in 1955 by promoters of various unorthodox drugs, devices, and nutritional wares, a number of whom had lost cases under food and drug laws, the NHF had grown by the 1970s into a powerful propaganda and lobbying force. Fearful of the FDA's prospective vitamin regulations, the Federation brought its weight to bear upon the Congress in 1973, flooding it with a greater tide of mail, it is said, than was prompted by Watergate. In the bicentennial year, the Congress yielded to continuing pressure and enacted a law, the Vitamin Amendments of 1976, which virtually eliminated the FDA's control over vitamins and minerals and other ingredients in dietary supplements not sold as drugs. While this law was pending in the Congress, the Food and Drug Commissioner characterized it as "a charlatan's dream."

Such legislative triumphs betoken a high degree of integration among unorthodoxy's major fronts, a spirit of cooperation and joint endeavor. Similar alliances must have been formed also in Hooker's day to fight the "Black Laws" that irregulars opposed. The leaguing together today can be observed in other ways as well.

Besides the exotic ologies already mentioned at the Detroit meeting of two years ago, according to its program and exhibit leaflets the visitor might become ac-

quainted with a host of other brands [28]. Advertising in the Detroit program a chiropractic clinic featured "Applied Kinesiology." Harold Manner was listed to lecture on his mice experiments favorable to Laetrile, experiments criticized by many scientists. Master of ceremonies, according to the program, was Clinton Miller, a Utah promoter of food supplements who became a big mogul in and Washington lobbyist for the National Health Federation. Rene Caisse was billed to speak, the Canadian nurse who spent more than a half century promoting an Indian herbal cancer treatment named by spelling her surname backward. The Life Science Church advertised "chelation treatment . . . for hardening of the arteries." Assortments of health foods also were promoted for sale. Penny Rich, for one, offered to "Increase Your Life Force with Life Source," an all-organic vitamin and mineral supplement containing yeast, ginseng, selenium, vitamin E, chelated minerals, DNA, and RNA. "Magic in medicine," as Lewis Thomas has observed, "is back, and in full force" [33]. That force is considerably organized.

Because of laws against misleading labeling and advertising, restraints non-existent in Worthington Hooker's time, today's promoters have had to cast a weather eye to the hazard of going to court. Another characteristic of current unorthodoxy is its efforts to achieve fail-safe promotion and invulnerable vending. For billions of dollars worth of nutritional products, drugs, and devices sold, neither their advertising nor their labeling makes any health claims whatsoever. But the purchaser knows full well the therapeutic purpose for which he buys. He has got the message, protected by the first amendment, from some paperback book, magazine article, supermarket tabloid, or television talk show. The American Council on Science and Health *News & Views* has recently wondered if many of the self-help health books universally available are not a "Rx for Disaster" [42]. The science in the checkout-counter press, David Leff describes as a "neo-medieval fantasy world of magic, mystery and miracle" [43]. Constant reiterations of the curative efficacy of this or that for treating major diseases—say, some real vitamin, perhaps in megadoses, or a specious one like B-15 or B-17—have developed a vast new mythology given credence by millions of people. The promoter can count upon this popular knowledge and keep his advertising and labeling safely discreet.

Another approach to diluting risk from regulation has been the proliferation of treatment clinics, manned by licensed practitioners, some of them M.D.s, at which the alternative therapy is holistic, multi-faceted, a complex system of varying approaches, none starkly standing out, the entire combination stated as necessary for efficacy. Suggestions of this approach appear in the *Penthouse* article earlier mentioned [32]. Laetrile's most recent major shift has seen its envelopment in the broader cloak of metabolic and holistic medicine. "You do not and cannot expect to get results from Laetrile treatment," said Robert Bradford, a founder of the Committee for Freedom of Choice in Cancer Therapy, "unless you are a trained metabolic physician" [44]. In a recent book, *Now That You Have Cancer*, Bradford likened the metabolic program to a crown containing nine jewels, with Laetrile "the crown jewel within the diadem," the others, including diet, detoxification, minerals, enzymes, vitamins, all deemed equally necessary for control of cancer [45]. Legal attacks are harder to mount against a complex system than against a single article.

In the battle for public attention, Worthington Hooker, could he survey the current scene, certainly would find that the volume of words contributing to medical delusions far outweighs the critique of foolology. Indeed, the volume of criticism I would estimate as lower now than some times in the past, but rising. The American Medical Association, dominant in this field since early in the century, some years ago

abolished its quackery committee and closed down its Department of Investigation [46]. A major joint educational campaign against quackery, sponsored by regulatory agencies and voluntary health associations through the decade of the sixties, had no counterpart in the seventies. The interpretation of unorthodoxy in the popular media during the last decade, in my judgment, distinctly shifted along the hostile-favorable axis away from skepticism, often toward drum-beating support. Criticism of quackery, however, if too seldom seen by the ordinary casual reader, did not completely cease. Major promotions like that of Laetrile received much condemnation. That excellent volume, *The Health Robbers*, engineered by a physician, Stephen Barrett, was published in 1976 [26], and reissued in 1980, completely revised. A hard-hitting series of articles appearing in *Consumer Reports* has been republished in a paperback called *Health Quackery* [37]. To judge from clippings I have been sent and phone calls made to me by reporters, there is a reviving interest in investigating the hazards and deceptions inherent in quackery.

In view of the intellectual climate I have sketched and of the power and cleverness of today's unorthodoxy, a legion of Worthington Hookers, I would say, are sorely needed. Spokesmen for alternative therapies boldly predict their triumph over orthodox medical science in the contest being waged for the allegiance of the public. "The whole tide," asserted Michael Culbert, a Laetrile leader, recently, "is beginning to turn toward metabolic therapy for degenerative disease and preventive medicine. Laetrile . . . has been the battering ram that is dragging right along with it . . . B-15, . . . acupuncture, kinesiology, . . . homeopathy and chiropractic. . . . And we've done it all by making Laetrile a political issue" [47]. A seasoned foe of quackery sadly made a similar prediction not long ago. "I believe the trend is so well established," said Thomas H. Jukes of the University of California at Berkeley, "that its impact will produce a decline of scientific medicine" [48].

Ricky Rickets might feel vindicated, but Worthington Hooker would not be amused.

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